Sources of High California Gasoline Prices: Refining Capacity, Economic Growth, or Market Power?

Philip K. Verleger, Jr.

PKVerleger LLC
Aspen, Colorado

The Assertions

"Dismissals of the idea that firms in California's CaRFG gasoline market would be able to drive prices above the competitive level are not well founded."

At periods of peak demands, producers with market power have an added incentive to cut production. (14)

California prices exceeded US average prices by an amount "approximately over the additional long-run costs of CaRFG." Recently, California gasoline prices have "exceeded US averages by an amount that is much greater than the cost differential." (24)

"If consumers' demand is not sensitive to prices *and* refiners are producing near their capacity constraints, then it is likely to be profitable to reduce production to drive up prices, possibly even if that refiner does not have a large market share." (10)

Refiners have an incentive to "game" inventory levels to boost speculative profits. (15)

Refining shares many of the characteristics with the electricity generation market. (8) In electricity, analysis has shown that firms with market power were able to raise prices well above market prices. (11)

Source: Severin Bornstein, James Bushnell, and Matthew Lewis, *Market Power in California's Gasoline Market*, May 2004.

Some Facts

The relevant economic market is not California but includes at least four other states.

Empirical evidence implies the absence of market power in refining.

Gasoline is not electricity.

West Coast consumers are becoming more dependent on gasoline imports from other areas.

The increase in import dependence dilutes whatever nonexistent hypothetical market power exists.

The Relevant Market Is the Five Continental Western States

The Berkeley authors error by narrowing their focus to only California markets.

The FTC has concluded the relevant market is Continental PADD V.[1] The facts support this contention.

- California receives CaRFG gasoline from Washington.
- California ships CaRFG-like gasoline to Arizona, Oregon and Nevada.

"Because of FTC divestiture orders, concentration has not increased in California since 1999." *The Petroleum Industry*, August 2004, p. 192.

[1]PADD stands for Petroleum Administration District for Defense. PADD V includes the states of Alaska, Arizona, California, Hawaii, Nevada, Oregon, and Washington. Continental PADD V excludes Alaska and Hawaii.

Market Power Exists Only in Rare Circumstances in Practice

Existence of market power depends on two factors:

- Market Share
- Price elasticity of demand

The price elasticity of gasoline is around -0.1 in the short run (3 months) and -0.2 for a year.

Using these elasticities, it is unlikely any West Coast firm can increase its revenues by cutting gasoline sales. But hard data are not available.

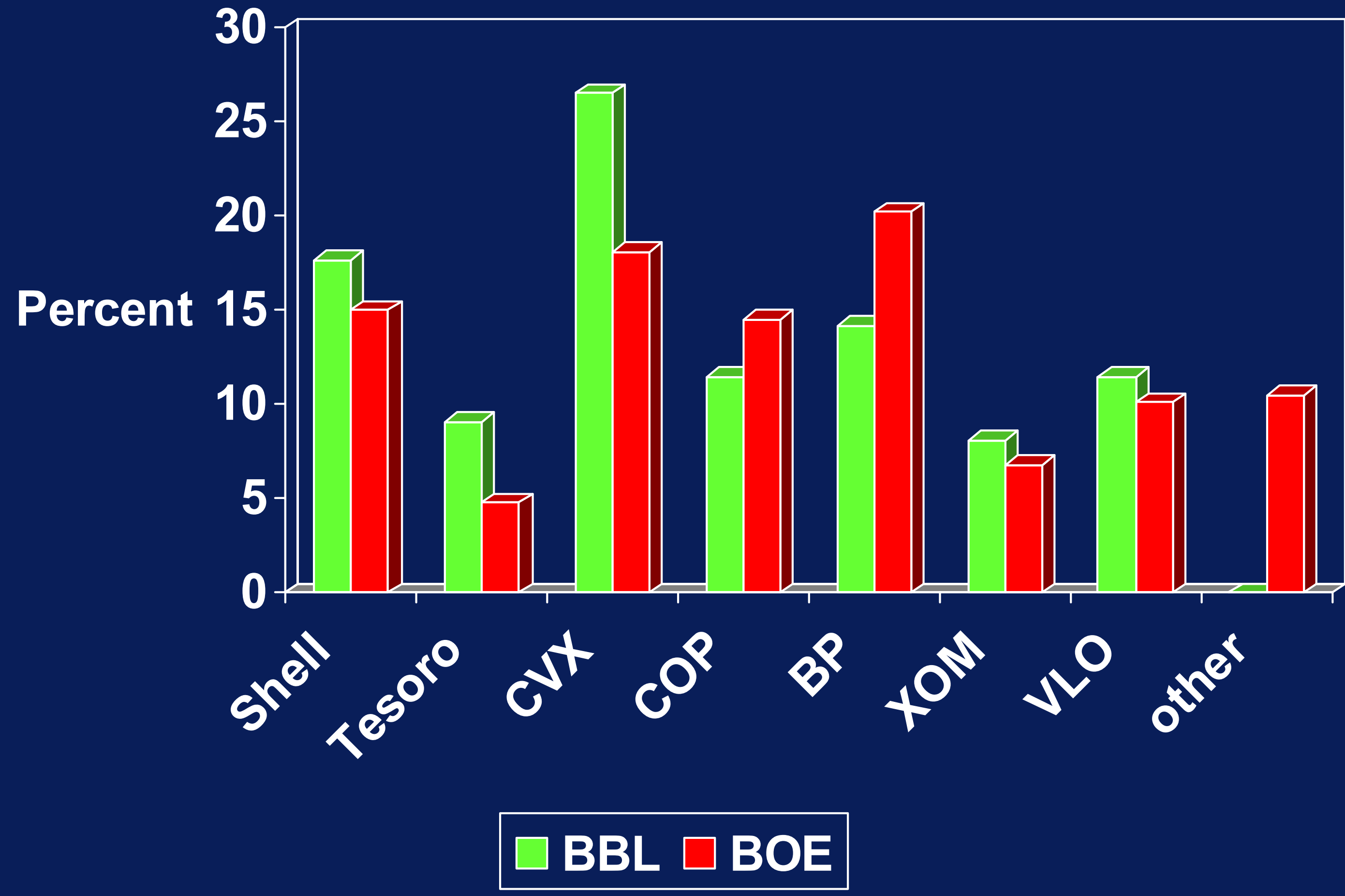
Bornstein, Bushnell and Lewis (BBL) Offer No Hard Data on Markets Shares

BBL present data on California refining capacity, **not on market share.**

Correct data on market shares reveal a very different picture.

Data for the other four contiguous states would probably reveal an even greater difference with BBL's data.

California Market Shares of Seven Refiners as Represented by BBL and by California BOE



Data sources: Berkeley, Bornstein et al; correct data, market shares for California from State Board of Equalization

Gasoline Is Not Electricity

Bornstein et al. insinuate that petroleum markets are similar to electricity markets with similar options for suppliers and similar consequences. They are wrong. There are major differences.

- Gasoline consumers can choose among suppliers.
- Gasoline is a differentiated product in both service and quality.
- Gasoline prices are known at the point and time of purchase.
- The world's largest intermediary, Wal-Mart, is becoming a growing presence in gasoline but not electricity. Wal-Mart is very different from the Power Exchange.

Petroleum Inventories Are Shrinking Globally and Locally

Inventories are very expensive, especially with prices at $50 per barrel.

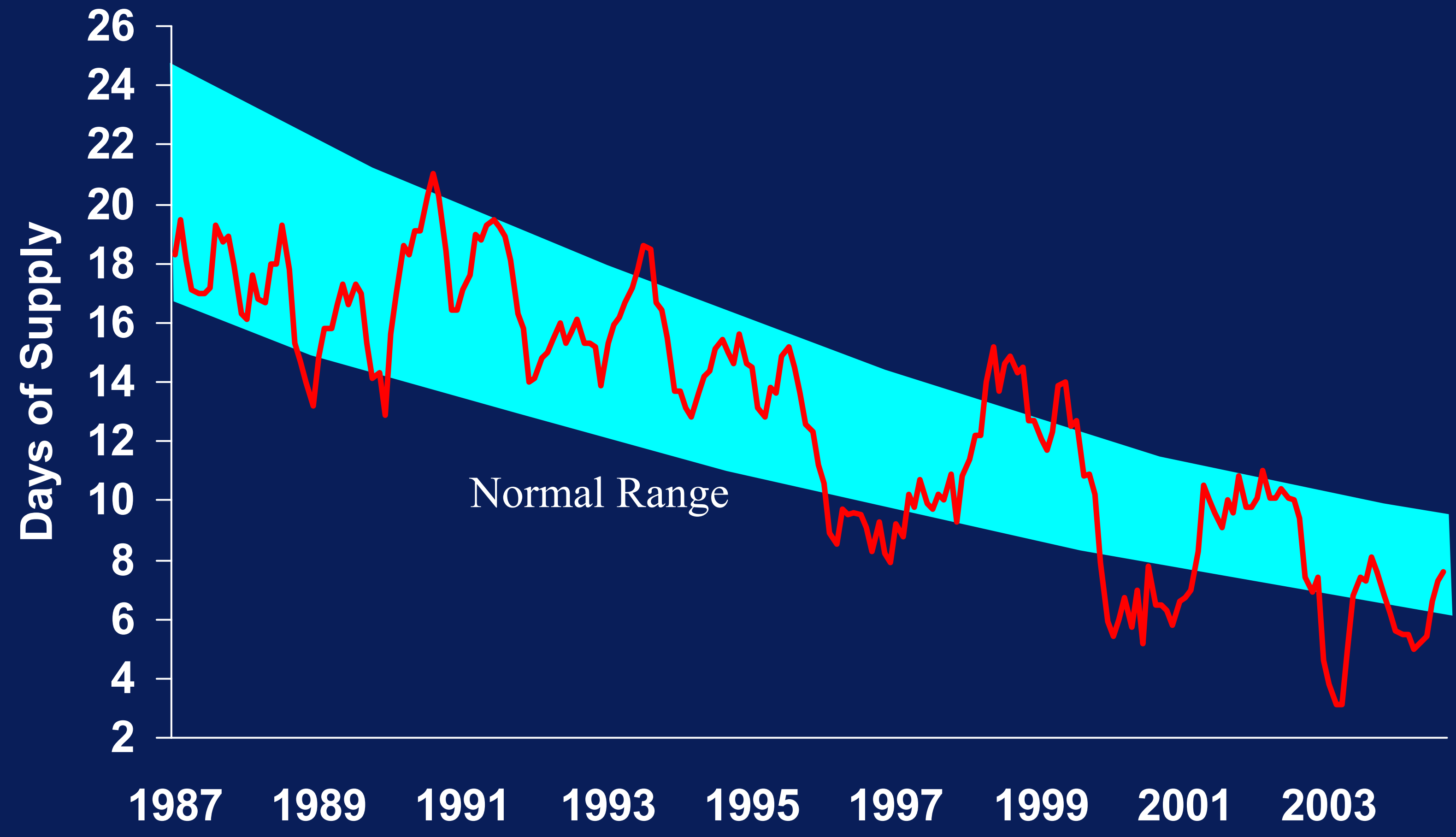
- Enormous amounts of working capital are required to hold minimum operating stocks.
- Banks are very reluctant to finance even minimum stocks.

Refiners across the globe have become increasingly efficient and are able to operate with lower stocks, most of the time.

- The view supported by a forthcoming NPC study
- Also supported by recent events with Hurricane Ivan

Speculative stocks do not exist.

Usable Commercial Petroleum Stocks in OECD Countries



Source: EIG;
PKVerleger LLC.

West Coast Consumers Are Becoming More Dependent on Imports

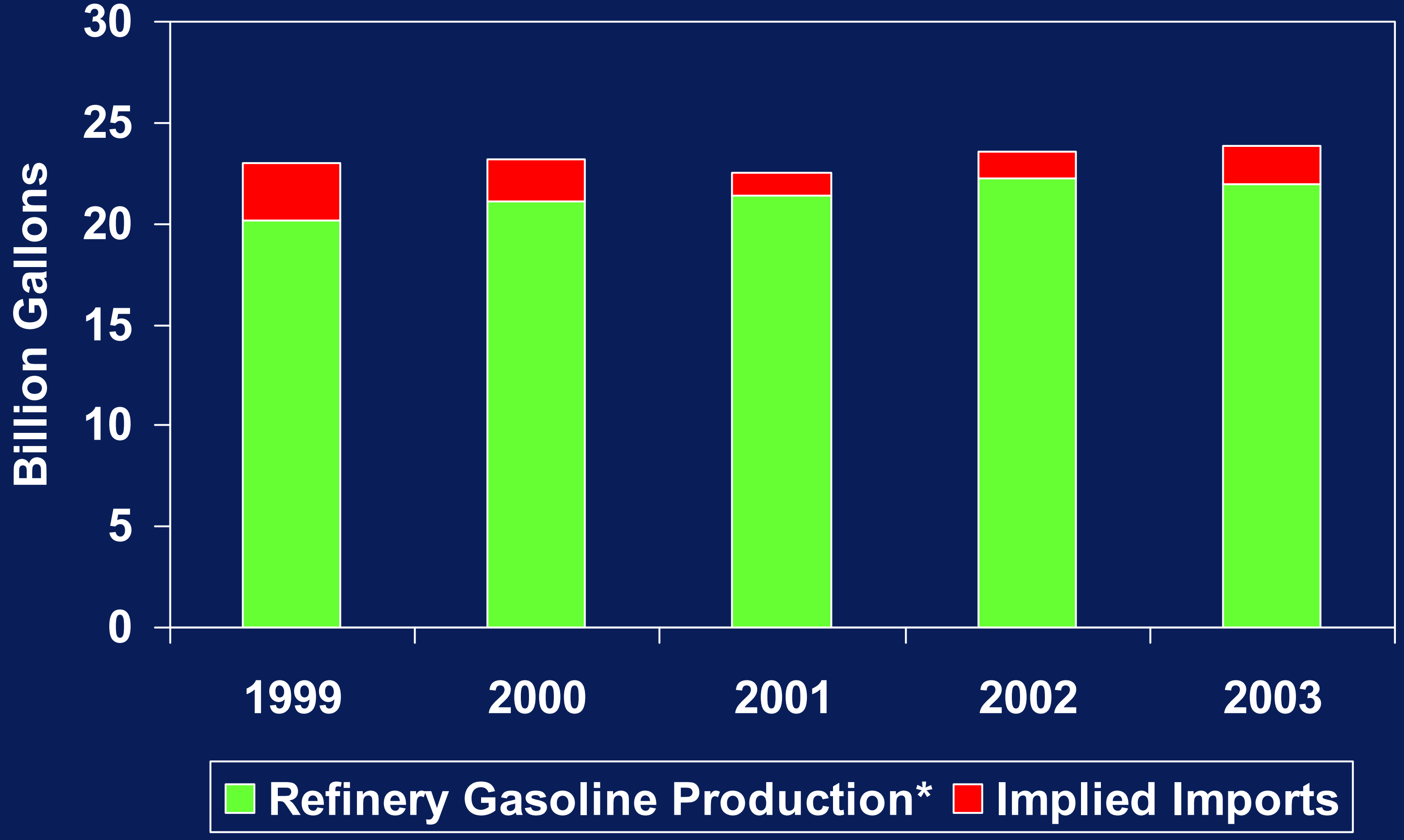
Gasoline demand is increasing at a faster rate than indigenous production.

- Detroit has sold consumers on SUVs.
- Governments have made it difficult to expand refining capacity.
- Replacement of MTBE with ethanol has further cut domestic supply.

These trends will continue. Imports will increase.

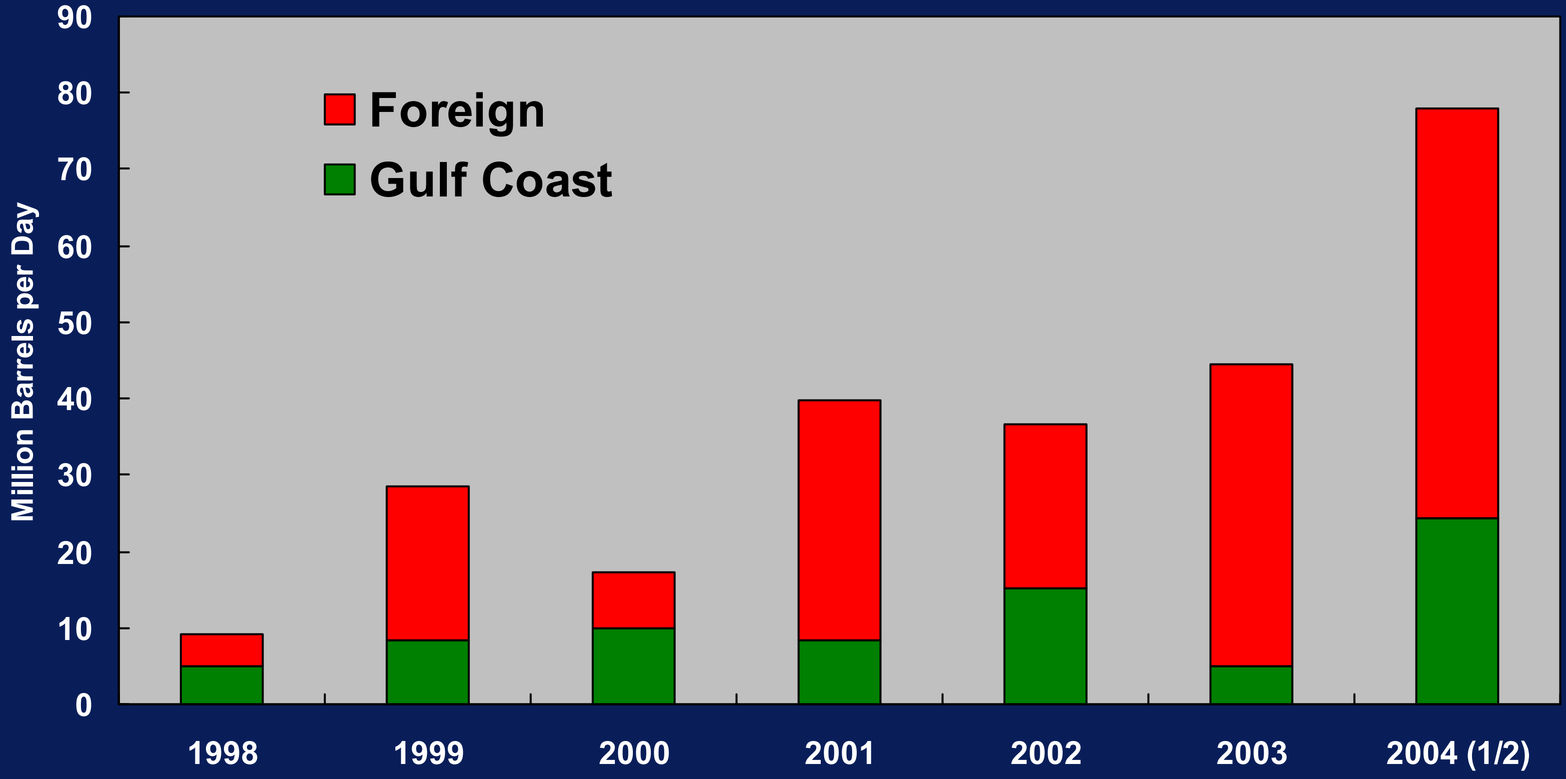
The increase in imports will require that California gasoline rise to the cost of gasoline in the Gulf of Mexico plus transportation.

Sources of West Coast Gasoline Supply



*All gasolines, PADD V, Total Gallons per Year

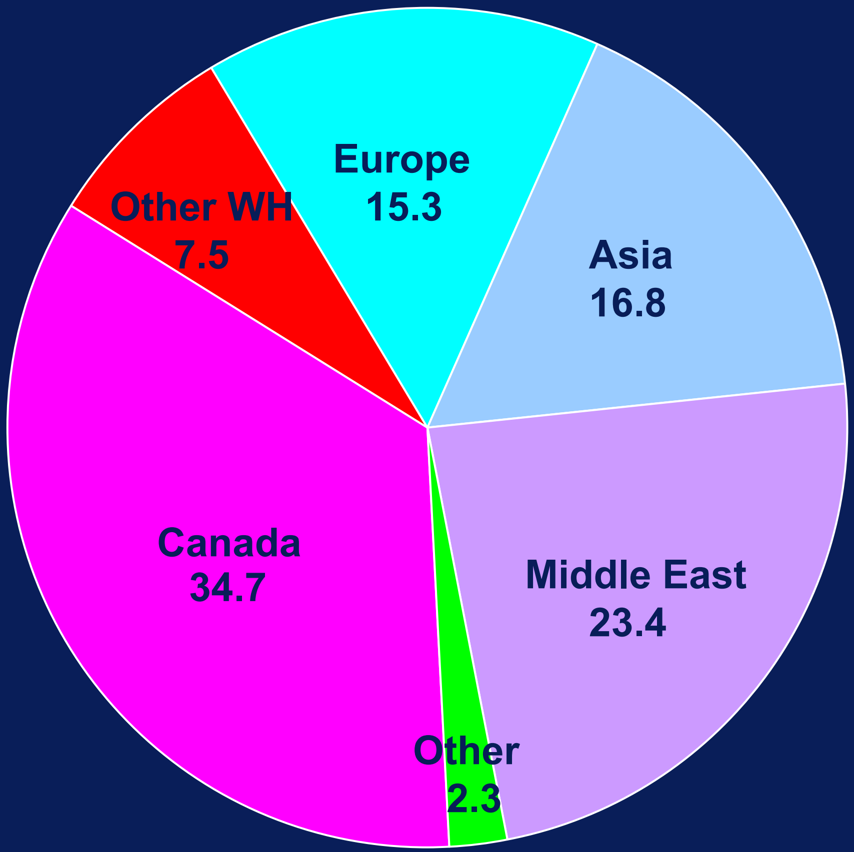
California Gasoline Imports



Includes finished gasoline and blending components, but excludes oxygenates

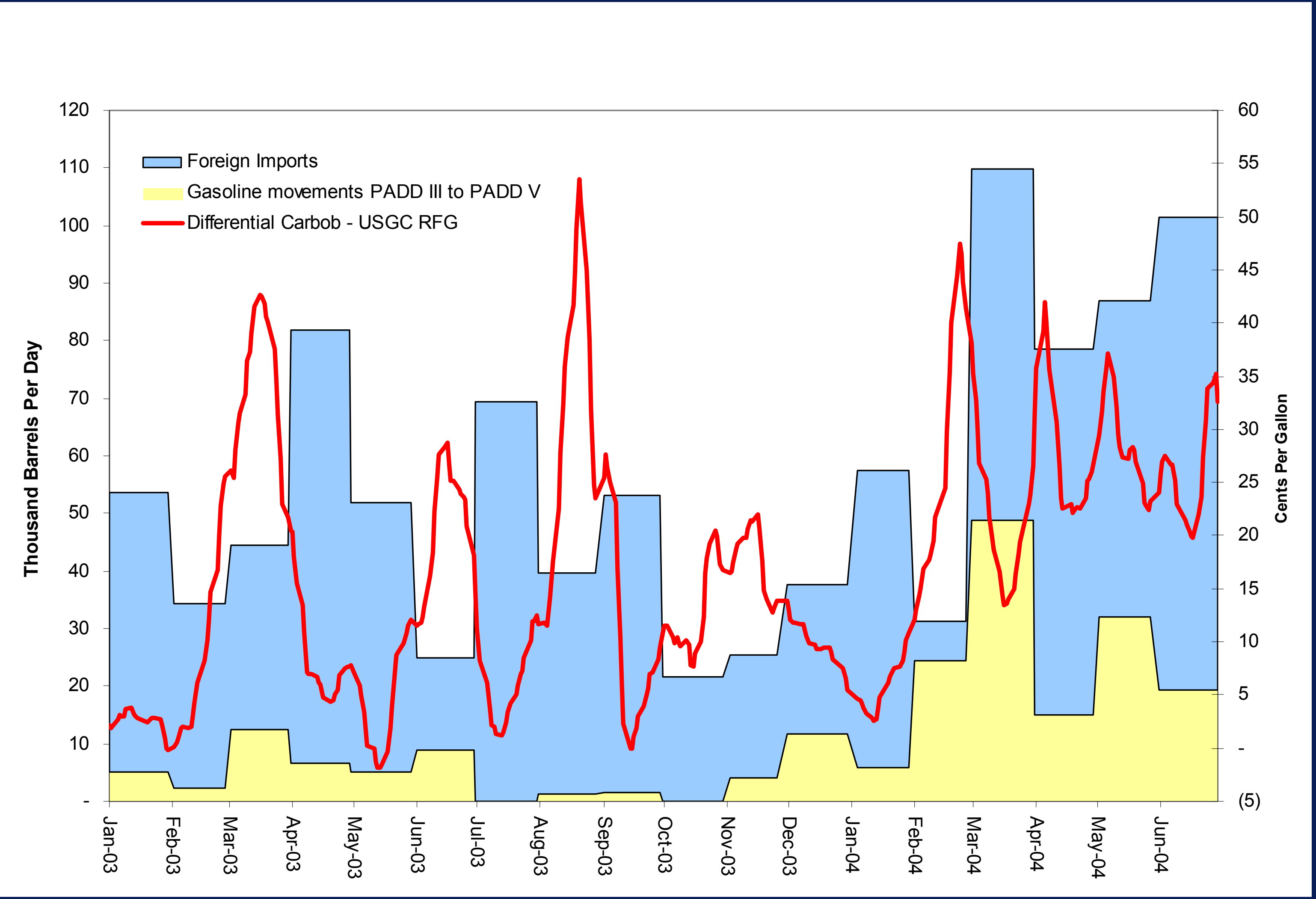
Imports Are Worldwide

Data for 2003 through June 2004, B/D (000)



Note: USVI included in Other Western Hemisphere

California Gasoline Imports and Price Arbitrage



Increased Dependence on Imports Reduces Market Share of Seven Refiners But Probably Results in Higher Prices

There are a large number of importers; refiners account for only half the imports.

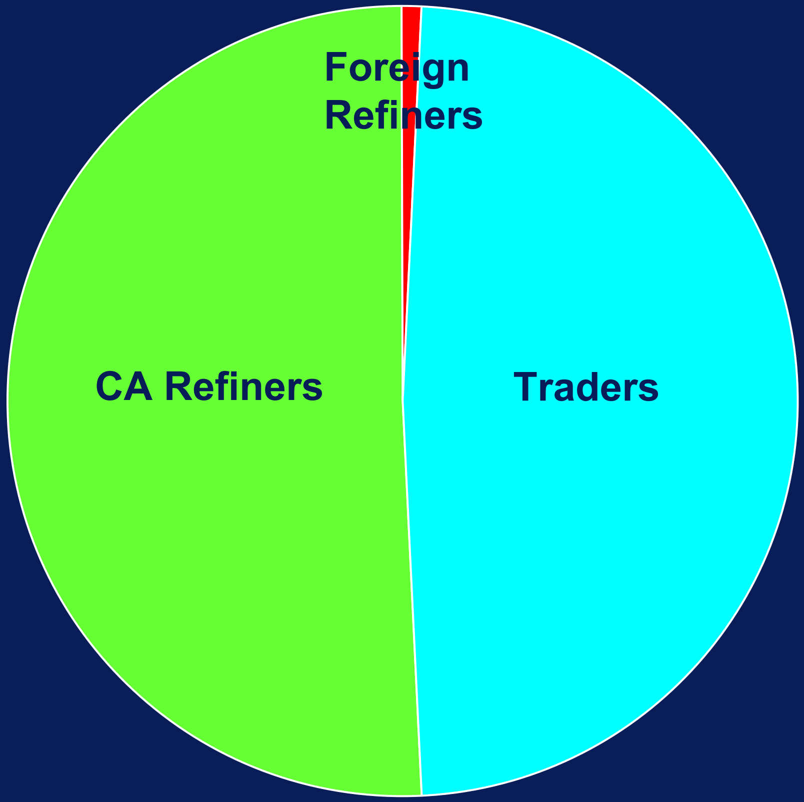
Importers may deal directly with independent intermediaries such as Costco or Tower Energy.

The costs of imports will likely raise prices.

- Economic theory teaches that domestic prices rise to import parity.
- The cost of imports is being boosted by very high transportation costs and inadequate global investment in infrastructure.

Traders Are Major Importers

Data for 2003 through June 2004



Note: CA Refiners includes all affiliates of CA refining companies

Conclusions

Market power issue can only be examined on a Continental PADD V basis.

None of the seven largest firms has a sufficient market share today to increase its revenue by cutting production as suggested by Berkeley economists.

Gasoline is different from electricity.

There are intermediate gasoline buyers who are interested in lowering costs unlike electricity.

Increasing dependence on imported product will diminish market share of California refiners because of source of imports.

Prices will likely rise because refinery expansion and construction has been constrained.

Steps Which Would Promote a More Competitive Market

1. Streamline permitting infrastructure expansion.

2. Reverse port policies that close marine infrastructure.

3. Recognize that the CEC/CARB Integrated Energy Policy Report chills the climate for investment in petroleum infrastructure capacity leading to greater imports and likely higher prices.

Additional Steps to Promote a More Competitive Market

Push for full utilization of Longhorn Pipeline to augment supply to Arizona and Nevada.

Remove federal minimum oxygenate mandate.